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GEOGRAPHICAL NOTES.

THE GEOGRAPHICAL DEBATING CLUB.—Fellows desiring to join the proposed Debating Club for the discussion of geographical questions, are invited to send in their names to

ELIAL F. HALL,
Recording Secretary,
American Geographical Society.

INTERNATIONAL MARINE CONFERENCE.—In accordance with an Act of Congress, which became a law July 9, 1888, there will be a Conference of the Maritime nations at Washington, April 17, 1889. As defined in the Act, the purposes are : “ To revise and amend the rules, regulations and practice concerning vessels at sea, and navigation generally, and the ‘ International Code of Flag and Night Signals ’ ; to adopt a uniform system of marine signals, or other means of plainly indicating the direction in which vessels are moving in fog, mist, falling snow and thick weather, and at night ; to compare and discuss the various systems employed for the saving of life and property from shipwreck, for reporting, marking and removing dangerous wrecks and obstructions to navigation, for designating vessels, for conveying to mariners and persons interested in shipping warnings of approach-

ing storms, of dangers to navigation, of changes in lights, buoys, and other day and night marks, and other important information; and to formulate and submit for ratification to the governments of all maritime nations proper international regulations for the prevention of collisions and other avoidable marine disasters."

"It will be understood by all States taking part in this Conference that no questions relating to Trade and Commerce are within the scope of the discussion, and that in the disposition of any questions which may be presented to the Conference, no State shall be entitled to more than one vote, whatever may be the number of delegates representing it."

A BROADER FIELD FOR THE UNITED STATES GEOLOGICAL SURVEY.—Prof. Persifor Frazer, writing on this subject in the *Journal of the Franklin Institute* for September, 1888, makes excellent fun of the propositions, frequently renewed, for bringing within the scope of the Geological Survey all things that are in the heaven above and in the earth beneath and in the waters under the earth.

When, however, he remarks in a semi-serious way that our country is the "broadest in longitude under the sun," he comes dangerously near to a statement of fact, since the United States really do range farther East and West than any country but Russia.

Whether the distinction of stretching so far is significant of anything is quite another matter.

TRANSATLANTIC ROUTES.—The Pilot Chart of the U. S. Hydrographic Office, for September, has the following remarks on the collision between the "Geiser"

and the "Thingvalla" on the 14th August, 30 miles S. of Sable Island :

"The Pilot Chart for December, 1887, discussed this subject of transatlantic navigation at some length, and a supplement was published, calling attention to the importance of some general understanding as to the routes to be followed by eastward and westward-bound vessels. The plan thus inaugurated has been adhered to each month since that time, one track being plotted as the southern limit for westward-bound vessels, and another as the northern limit for eastward-bound vessels. As stated last December, it is the object of this Chart to recommend only what masters of vessels may reasonably be expected to follow, having due regard to the mutual benefits to be derived from such an agreement, as well as the mutual concessions to be made in order to make it effective."

These Pilot Charts, issued monthly, contain information of the highest importance to all navigators.

A SLIGHT GEOGRAPHICAL CONFUSION.—The London *Athenæum* informed its readers not long ago that some amusement had been excited in America by the "slight geographical confusion of Massachusetts and New York" in a book of Mr. Walter Besant's. There is nothing criminal in such a blunder, but, like the confusion of England with Wales or Leeds with London, it amazes the reader. No man is required to know all things, but the writer, who professes to have studied a type of character in any particular country, is expected to have seen or heard of that country.

The *Athenæum* has ways of its own. The number

which is so charitable to Mr. Besant corrects a paragraph, evidently taken from an Italian source, concerning the royal library at Monaco and its 750,000 volumes. The correction, reproduced here by the *Library Journal* and by other papers, is worth quoting as a model of what ought not to be written : “ We did not think,” says the *Athenæum*, “ the announcement was made seriously, or that any one would believe it, except, possibly, the Public Orator at Cambridge ; but, as it appears to be accepted as the truth and to have been widely copied, we may state that there is no library at Monaco, either royal or other.”

This is meant to be final, but the Public Orator at Cambridge may take heart of grace. There is a royal library which contains not less than 750,000 volumes, at Munich, in Bavaria ; and the Italian name of that city is Monaco.

A serious literary journal ought to know something of the great libraries of the world, something of Italian, something of geography, and English enough to be aware that a principality is not a kingdom.

THE BETRAYER OF LA SALLE.—Mr. Francis Parkman, in his *La Salle and the Discovery of the Great West*, p. 405, tells in the following words the fate of the heroic explorer :

“ Duhaut and the surgeon crouched like Indians in the long, dry, reed-like grass of the last summer’s growth, while L’Archevêque stood in sight near the bank. La Salle, continuing to advance, soon saw him, and, calling to him, demanded where was Moranget.

The man, without lifting his hat, or any show of re-

spect, replied in an agitated and broken voice, but with a tone of studied insolence, that Moranget was strolling about somewhere. La Salle rebuked and menaced him. He rejoined with increased insolence, drawing back as he spoke towards the ambushade, while the incensed commander advanced to chastise him. At that moment a shot was fired from the grass, instantly followed by another ; and, pierced through the brain, La Salle dropped dead." This was in 1687.

Farther on (pp. 443—445) Mr. Parkman tells how L'Archevêque and another (Grollet) were found, disguised as Indians, by the Spaniards in 1689 and sent to Spain, where "in spite of the pledge given to them they were thrown into prison, with the intention of sending them back to labor in the mines."

The history leaves the matter at this point, but Mr. Ad. F. Bandelier, writing from Santa Fe, New Mexico, under date of August 13, 1888, to the *Evening Post* of this city, says that while engaged in researches in behalf of the Hemenway Southwestern Archæological Expedition, he had discovered at Santa Clara and at Santa Fe documents which enabled him to trace with but one break the career of L'Archevêque. The first paper was an "Ynformacion de Pedro Meusnier, francés—1699." This Meusnier, it is declared by two witnesses, Juan de Archeueque and Santiago Groslee, came over to America with them in the fleet commanded by Monsieur de la Sala in 1684. Meusnier and Archeueque were in 1699 soldiers of the garrison of Santa Fe, and Groslee was a resident of that town.

Mr. Bandelier has found Groslee (apparently the sailor Grollet) as Grolle and Groli in other records, and

evidence that he lived in the little town of Bernalillo on the Rio Grande, as late as the year 1705. Nothing more has yet been learned of Meusnier.

The case is different with L'Archevêque. There is a registration at Santa Fe of a transfer of real estate in 1701 to Juan de Archibeque, a soldier. There are documents which show that he was twice married, that he became a successful trader, that he was probably the Captain Archibeque of the War Councils of 1715 and 1720, and that in the latter he strongly recommended a reconnoissance to the Arkansas River, because, among other reasons in its favor, it would procure definite information in regard to "his countrymen the French." He accompanied this expedition and was killed, with 43 others, by the Pawnee Indians on the 17th of August, 1720.

This is proved by the "Inventory of the goods and chattels of the Captain Juan de Archibeque, a Frenchman," preserved in the archives at Santa Fe. The Captain's estate, after settlement, yielded 6118 pesos to the heirs.

Mr. Bandelier adds that there is still in New Mexico a family called Archibeque, and supposed to be of French descent. The name is evidently not Spanish, and it is known that Captain Archibeque left behind him four children.

CHATHAM ISLAND.—The Galápagos Islands belong to Ecuador, and are about 600 miles from the Coast of South America. The *Washington Star*, of Sept. 8, has an account, given by Prof. Lee, of the *Albatross* Expedition, of a visit to Chatham Island, wrongly described as the largest of the group.

The island is walled in with lofty volcanic rocks. Behind these was found a fertile country in a high state of cultivation. The population numbered about a hundred and fifty persons, convicts from Ecuador, and their governor was a man named Cobos, a Spaniard by race, to whom the island had been handed over by the Government. Cobos is a man of force. No one leaves or enters the island without his permission. He has travelled, knows a good deal of the outer world, speaks English after a manner, and rules not unjustly, if somewhat tyrannically.

The people are not much like him. They have no religion to speak of, and are not constrained so far as marriage ceremonies are concerned. The sexes are about equally divided, there is an abundance of food in the country, and costume is regarded as a kind of prejudice. Most of the people are natives of Ecuador and some are half-Indian. One "full-blooded British subject" was found to be a coal-black negro, born at St. Helena. There was one Englishwoman, about twenty-five years old, with blue eyes and light hair, and, says Prof. Lee, "as tough-looking a specimen as I ever came across."

On Charles Island, which lies S.W. from Chatham, a kind of Robinson Crusoe was found in a man who had run away from companions, with whom he had left Chatham Island some years before, and had lived ever since like a wild creature. At his own request he was taken back to Chatham Island.

PERUVIAN GEOGRAPHICAL SOCIETY.—This Society, which has been formed under the auspices of the Government, held its first meeting in the Senate Hall, at

Lima, on the 15th March, 1888. A Committee was nominated to make rules.

Don Leonardo Pflucker was elected President, and Don Pedro Paz Soldan Secretary.

It is no more than just to remark that Peru has, by this step, taken the third place among South American Countries, so far as interest in geographical matters is concerned. Brazil and the Argentine Republic have set the example and Chili has her German Scientific Union at Santiago ; but the national movement in Peru must take precedence of this last.

FRENCH GUIANA.—M. Henri Coudreau writes from Cayenne to the *Revue*, of Tours, a brief account of his travels in the interior of Guiana.

He reached Cayenne at the beginning of July, after exploring the rivers Maroni, Aoua and Itany and passing seven months in the western Tumuc-Humac mountains.

He brought with him to Cayenne five Indians, among them a great chief of the Roucouyennes, whose language M. Coudreau affirms, not without malice, that he speaks as well as a member of the Academy speaks French.

He discovered sixteen new Indian tribes, and he estimates the Indian population of Upper French Guiana at 20,000. He holds advanced theories on the subject of crossing the races, and looks forward to the development of a special type in Guiana.

INTERNATIONAL CONGRESS OF AMERICANISTS.—The Seventh Session of this Congress will be held at Berlin, October 2d—5th, 1888.

The first day will be devoted to the history of the Discovery of the New World, to Præ-Columbian American History, and to American Geology ; the second day, to Archæology ; the third, to Anthropology and Ethnography ; and the fourth, to Linguistics and Palæography. In all there are thirty-seven questions to be brought before the Congress, and it is with some surprise that the reader fails to find, in the list of those by whom the subjects are to be presented, a single American name.

INTERNATIONAL CONGRESS OF GEOGRAPHICAL SCIENCES.—The Paris Geographical Society has issued invitations for an International Geographical Congress to be held at Paris, in August, 1889. There will be seven Sections :

1. Geodesy, Hydrography and Topography ;
2. Physical Geography ;
3. Economical and Commercial Geography ;
4. Historical and Ethnographical Geography ;
5. Methods of Geographical Instruction ;
6. Travel and Exploration ;
7. Cartography.

The admission fee is fixed at 20 francs for members of the Society, and 40 francs for others. Each contributor has the right to a vote, and to a copy of the Minutes and the Publications of the Congress.

It is desired that names be sent in as soon as possible to M. Maunoir, Secretary of the *Société de Géographie*, or to M. Gauthiot, Secretary of the *Société de Géographie Commerciale*.

It is suggested that each Society, taking part in the

deliberations of the Congress, present a Summary Report on the travels and explorations, as well as on the publications, which have contributed to the progress of Geography for the past hundred years in the country it represents.

THE ETHNOGRAPHY OF THE CANARY ISLANDS.—The *Bulletin* of the Bordeaux *Soc. de Géographie Commerciale* for August 6th, has a brief report of Dr. Verneau's five years' exploration of the Canary Islands. As a member of the Anthropological Society of Paris, Dr. Verneau gave particular attention to the population of the group at the time of the occupation by Béthencourt in the 15th century.

He finds in this population three elements: 1, the Guanches, who were very large and robust and with long necks, and were, he believes, identical with the Troglodytes of the South of France; 2, the Semites, who had numerous physical resemblances with the Arabs; and 3, a people of unknown origin, distinguished from both the others by their rounded heads and their small stature. The Semitic race had made greater advances than the Guanches, the stone implements and the pottery of the latter being rude and comparatively unfinished, while those of the Semites were often polished and ornamented with designs in black or red.

Dr. Verneau affirms that the people of Gomera possess a whistling language by means of which they express every kind of idea.

"My doubts on this subject," he says, "were completely removed in March, 1878, at Valle-Gran-Rey. I had had a fall, which confined me to the bed, and was

waiting for a boat to take me to Ferro ; but I did not wish to leave without exploring some grottoes of which I had heard, and I decided to send some men thither. Two days after I was able to rise, and went out with my host to walk on the sea shore. All at once we heard a whistling from the mountain. My companion listened attentively and told me that my men were returning. I put through him several questions, which were answered at once. The men whistled that they had examined three grottoes and had secured for me thirty-three skulls, besides sticks and other objects. When they reached us the report was found to be exact in all its details." When these men began to whistle they were at Tejeriguete, which is $2\frac{1}{2}$ miles from Valle-Gran-Rey.

AFRICAN EXPLORATION.—Dr. Alex. Supan writes in *Petermanns Mittheilungen*, Band 34, VI, an admirable review of the progress of discovery in Africa for the past hundred years. The text is illustrated by a map which shows, marked in red, the advances made in each successive decade of years from 1790 to 1880. The first sign of an impression upon the vast interior of the continent appears in 1830, and the comparison of the map at this date with the additional map, giving the actual knowledge of Africa in 1888, is most instructive.

What remains to be done is set forth as follows :

There are three great unknown regions between 16° N. Lat. and the Equator. These are, in the W., Mandingo Land, roughly defined as the country reaching inwards from between Monrovia and the Slave Coast, to the Niger River ; in the centre, the Liba region, bounded on the S. by the Ubangi River ; and, in the E., the

Galla-Somali Land. The area of these districts is estimated, in the order named, at 347,505, 463,339, and 501,950 square miles.

They all lie within the circle of the interests of the colonial Powers in that part of the Continent, England, France and Germany, and, for the Galla-Somali Land, Italy also.

Dr Supan closes his paper with these words :

“ When European explorers have marked out their routes through Mandingo Land, Liba Land and the Galla-Somali country, the great period of discovery, which began with the founding of the Africa Association (June 9, 1788), will have reached its conclusion. Then first it may be said that the portions of Africa accessible to culture have been brought within our knowledge. Then the framework will have been finished, and work may be begun for the completion of the edifice.”

FROM MANCHURIA TO KASHMIR.—Lieut. Younghusband, who accompanied Mr. James and Mr. Fulford in their journey to Manchuria in 1886, contributes to the *Proceedings* of the Royal Geographical Society, for August, an account of his travels through Central Asia in 1887.

He left Peking April 4, reached Kalgan on the Mongolian frontier on the 10th and turned westward, up the valley of the Yangho, passing through a desolate country with half-ruined villages. Horrible sand-storms were of almost daily occurrence. The light soil (Richthofen's *loess*) crumbled under the slightest pressure, and the roads were 30 or 40 feet below the surrounding country.

On the 14th he reached the Mongolian steppes, now invaded by Chinese immigrants. At Kuku-choto he prepared for his march across the Gobi Desert, and started on the 26th with a Chinese servant, the camel-owner, and a Mongol assistant. For some days the country was undulating, with grass meadows and pure water. Then it began to change and grew barren and lonely, with ranges of hills like those on the Gulf of Suez and between them seemingly endless plains. Setting out at 3 P. M., the party travelled till midnight, and then encamped till the next day. The monotony and the silence were fearful, but the nights were extremely beautiful, and the stars shone out with a magnificence the traveller had never seen equalled even in the high Himalayas. Venus was resplendent, and the Milky Way was so bright that it looked like a phosphorescent cloud, or a light cloud with the moon behind it. The atmosphere was remarkably dry and so charged with electricity that in opening a sheepskin coat or a blanket a loud crackling noise was given out, accompanied by a sheet of fire.

The days were often very hot, but a strong wind generally sprang up at about ten o'clock in the morning. Rain sometimes came with the south wind.

The travellers would see rain falling heavily ahead of them, but when they reached the spot there would be no sign of moisture on the ground. After crossing the Galpin (or Galbün) Gobi and skirting the Hurku Range, the party came to the outlying spurs of the Altai Mountains.

These mountains were perfectly barren, the upper portion being bare rock and the lower composed of long gravel slopes formed of the debris. The Dzungaria

Desert, hot as a furnace, was crossed to the Tian-Shan, and on the 4th July Hami was reached. This was the first Turkistan town, and its low, flat-roofed mud houses and small shops were very unlike the large and well-built Chinese dwellings.

"If," says Lieut. Younghusband, "you could get a bird's-eye view of Chinese Turkistan you would see a great bare desert surrounded on three sides by barren mountains, and at their bases some vivid green spots." Round Kashgar and Yarkand the cultivation is more continuous than in the eastern half. The Turkis are industrious but not such good cultivators as the Chinese.

The authority of the Chinese is absolute, though almost unsupported by military force; and they rule without oppressing the people. The fear of the Chinese power is general, not only in Turkistan, but in Kashmir and Nepal, and is felt even by the Afghan and Hindustani merchants who have travelled all through India and Russian Turkistan.

Lieut. Younghusband started from Hami on the 8th July, over the route travelled by Tso-Tsung-Tang's army in its victorious campaign against Yakub Beg. On the 15th he reached Turfan, where the people live in under-ground rooms during the day, to avoid the heat. Round the town for many miles were wells, thousands in number, that had been dug by the Chinese when they besieged the place. One well, which was measured, was 110 feet deep.

On the 20th August Kashgar was reached. Here there are great numbers of merchants from all parts of Asia, and all praise the English rule in India.

The English are, by the reported Asiatic opinion,

the only people who know how to govern a country. The Asiatics must be right, for the English have the same opinion. Leaving Kashgar on the 26th Aug., Lieut. Younghusband reached Yarkand on the 29th, and started on the 8th Sept. for Kashmir. On the 15th he crossed the Tupa Dawán Pass, *only* 10,400 feet high, and beyond this the path led through tremendous mountain ranges and over glaciers, and near the second highest mountain in the world, known in the Indian Survey as K 2, and 28,250 feet in height ; the upper part for about 5,000 feet being a perfect cone of ice and snow. In the absence of a native name the Royal Geographical Society proposes to call this mountain *Godwin-Austen*, after the officer who first surveyed the Mustagh Range. Mountains, like men, must undergo their fate, but conquerors should be merciful. When the old Mustagh Pass was reached, about 20,000 feet above the sea, the only way of getting down was by crossing an icy slope to a cliff too steep for a particle of snow to rest on it. Other icy slopes were below. After consultation, Wali—, “the finest fellow that ever stepped,” says his commander—quietly took an axe, tied a rope round his waist, gave the end of it to the rest, and told them to follow him. He went down, cutting steps in the ice as he went, and so from slope to slope, the party got through, and arrived at Rawalpindi on the 4th November, seven months after leaving Peking.

Lieut. Younghusband concludes from his observations during this long march through the Chinese Empire, that there is practically no military strength in China, though the material for an army is abundant and excellent ; and, in the serious matter of trade in Turkis-

tan, he declares that the Russians, with their stronger, more durable and more tasteful goods, have driven the English out of the bazaars.

THE COLDEST PLACE ON EARTH.—The *Meteorologische Zeitschrift*, quoted in the *Verhandlungen* of the Berlin *Gesellschaft für Erdkunde*, gives from the calculations of Prof. Wild, of St. Petersburg, the results of recorded observations of the temperature at Verchojansk in north-eastern Siberia, up to the year 1887. The mean for each month is given, compared with that for the same month at Berlin; presumably by the centigrade thermometer, though the fact is not stated. The figures are :

	VERCHOJANSK.	BERLIN.
January	—53.1	—0.5
February	—46.3	1.2
March	—34.7	3.5
April	—15.8	8.4
May	— 0.1	13.2
June	9.6	17.5
July	13.8	19.0
August	6.4	18.1
September	— 1.6	14.9
October	—20.2	9.4
November	—40.1	3.7
December	—49.9	0.7
For the year	—19.3	9.1

The January temperature at Verchojansk is equal to 63°.58 below zero of Fahrenheit, while at Berlin the mean for January is only 31°.10 Fahrenheit. The aver-

ages for the year are, respectively, $2^{\circ}.74$ below zero and $48^{\circ}.38$, Fahr.

A minimum temperature of -60 is experienced at Verchojansk in every winter month, and even in March. The lowest temperature recorded is $-64^{\circ}.5$, equal to $84^{\circ}.10$ below zero, Fahrenheit; and the highest is $30^{\circ} 4$ ($86^{\circ}.72$ Fahr.). So that the range of the thermometer at this place in the course of the year may mark a difference of 171 degrees.

Cruel as the climate is, Verchojansk is officially classed as a city, with a permanent population, according to Reclus, of 330 persons.

THE NEW VEGETATION OF KRAKATAU.—*Nature*, of August 9, publishes a communication from Mr. W. B. Hemsley, embodying information received from Dr. M. Treub, Director of the Buitenzorg Botanic Garden. Dr. Treub visited Krakatau in 1886, three years after the volcanic eruption which destroyed the vegetation of the island.

He found the cinders and pumice stone covered almost everywhere with fresh-water Algæ, six species in all, and he collected eleven species of ferns, some of them already common.

There were also on the shore and on the mountain itself young plants of more than twenty different kinds, nearly all such as take possession of newly raised coral islands.

This is thought to be the first actual observation of the renewal of vegetation on a volcanic island.

It is a pity that Mr. Hemsley, with Mr. Verbeek's authoritative work before him, has done what he could

to increase confusion by spelling the name of the island *Krakatão*.

THE FATE OF STANLEY.—It is now more than fifteen months since Stanley disappeared from the sight of men.

Favorable and unfavorable reports and rumors concerning him have been received from time to time and discussed and forgotten; and the world is left, after all, wholly in the dark. The mere lapse of time would not of itself be an argument against his safety and final reappearance; but it is disheartening, when taken with the fact that his fate has been from the beginning in the hands of Tippu Tip. This man, the most powerful of the Arab slave-traders,—for, though not of pure blood, he is virtually an Arab,—is held to have been completely won over by Stanley. Admitting this, it does not follow that the other slave-traders sympathize with Tippu Tip. It is, on the contrary, quite conceivable that they may have been too strong for him, and that their influence, added to the promptings of an obvious self-interest, may have led him to reconsider his change of heart. In this case the odds would be tremendous against the explorer, who had plunged into the wilderness, relying on the good faith and the sense of honor of a man who had grown rich and powerful by hunting slaves. The danger from the Arabs is beyond question. They are resolute and intelligent, and they know that European supremacy means the speedy suppression of the slave-trade, and a check to Mohammedanism.

It is assumed by some that there is little to be feared from the negroes. Prof. Drummond says, in his *Trop-*

ical Africa, that he one day went so far as to ask his carriers why they did not kill him, a single man among so many. The answer was, that the white men were spirits, and that no negro would venture to kill a spirit. The annals of African discovery present an instructive commentary on this text, and afford little comfort to those who would like to believe that the native Africans, if unprovoked, may always be trusted.

Provocation, however, there is sure to be, if not for one cause, then for another. Dr. Junker, Emin Pasha's companion, speaking before the Swedish Geographical Society a few weeks ago, expressed a firm belief in the safety of the Expedition, and accounted for the non-receipt of intelligence by saying that Stanley would have to obtain food for his men by force, and would consequently be unable to send messengers through the tribe thus roused to hostility. If this explains the lack of news, it does nothing to lessen anxiety; and the report, unhappily confirmed, of Major Barttelot's murder reads like the first act of a dismal tragedy.

THE AFRICAN SLAVE-TRADE.—Cardinal Lavigerie will not be left to draw upon ancient history for facts concerning the horrors of the slave-trade in Africa. This traffic is actively pursued from the sources of the Niger to those of the Nile and from the Sahara to the Zambesi. *Le Mouvement Géographique* of August 26th devotes an extra sheet, with a map, to a rapid survey of the testimony borne by travellers in recent years. Nachtigal, in his last journey, was present at one of the slave-hunts of the Sultan of Baghirmi.

The men of the village attacked fought from behind

ramparts. Most of them were killed ; the rest and the women and children were carried off. Provisions gave out, dysentery declared itself, and the weaker slaves died one after another.

Flegel visited eight or nine years ago the Yaouri country on the middle Niger. It had been devastated a few years before by the Nakwamatch chief, who had destroyed fourteen towns.

Rohlf, when at Kouka, the capital of Bornu, saw one caravan of 4,000 slaves set out, in detachments, for the northern markets ; and Nachtigal saw the shops of the dealers in the same place crowded with their merchandise. Baghirmi and Bornu make an industry of supplying the slaves destined to serve as guards of the harems in the Mahommedan countries. Rohlf travelled the slave route across the Sahara. "On both sides of the road," he says, "were the whitened bones of the slaves, some of the skeletons still wearing scraps of clothing. A man who knew nothing of the way to Bornu would only have to guide himself by the bones on the right and on the left, and he could not go wrong." These slave routes lead to Morocco, to the country south of Algeria, the Fezzan, where, fifteen years ago, the annual importation reached 10,000, and to Siout, on the Nile.

In the Eastern Soudan the trade is not less active, the slaves being partly introduced into Egypt, but exported, for the most part, across the Red Sea. Sir Samuel Baker estimated the yearly exportation at 20,000, a figure which Schweinfurth holds to be much too low. Lieut. Wissmann tells in the *Proceedings* of the Royal Geographical Society for August, that he visited a Cen-

tral African town (Bagna Pesihi, of the Basonge tribe), clean, neatly kept, with grass-huts 20 feet high, and about 20 feet square. This town stretched in an unbroken line for about ten miles. The country was well cultivated, and the people were intelligent and kindly. Four years after, he visited the same place in company with Lieut. Le Marinel and Mr. Buslag. As they approached, the travellers were struck by the dead silence. The place was overgrown with tall grass, with here and there a charred pole and a few banana trees, the only evidences that man once dwelt theré. "Bleached skulls by the road-side, and the skeletons of human hands attached to poles tell the story of what has happened here since our last visit." This was the work of the Arab slave-hunters.

Mr. James Stevenson, who has long been interested in the work of civilization in Central Africa, has recently brought out at Glasgow a pamphlet on "The Arabs in Central Africa and at Lake Nyassa," in which he proves, if proof were needed, that nearly every African traveller has the same story to tell of the Arabs, whom Mr. Blyden wishes us to admire as the redeemers of Africa. Mr. Stevenson quotes from Mr. F. M. Moir, (*Scottish Geographical Magazine*, 1885) a passage, here condensed. Kabunda (an Arab) had made a raid in the Garden of the Tanganyika and was going to Zanzibar with a caravan, 3,000 strong, carrying ivory and slaves. First came armed men, with drums and musical instruments; then the great man, with his head-men by his side, a courteous, white-robed Arab, with gold-embroidered tunic, silver sword and daggers, and silken turban, and behind him his wives and servants; after these the main body of

armed men, and mingled with them the slaves, tied two and two in the *goree* or taming stick, or in gangs of a dozen, each with an iron collar let into a long iron chain. The women were fastened to chains, or thick ropes, and very many carried, besides heavy loads of grain or ivory, their babies. To give way or to faint was to lose, not the ivory, but the child, which would be thrown aside to die. Hyenas followed the line.

Kabunda, Mr. Moir tells us, was a polished gentleman; and nearly all of the Arabs in Central Africa deserve to be classed with him. There is but one way to suppress the trade, which has been developed and is sustained by such men, and that is to cut off the access to the market. The combined action proposed by Cardinal Lavigerie would be efficient, if it could be begun; but the spirit of the Crusades is extinct, and the humanitarian spirit has not the energy to move nations. The work must be done by the roused political and commercial instincts of the Europeans, striving with each other for the prizes of empire in Africa.

Mr. Stevenson's pamphlet is illustrated with two excellent maps, compiled by Mr. E. G. Ravenstein; and a separate map, on a scale of 1:750,000, by the same competent geographer, gives, largely from unpublished materials, the whole country between Lake Tanganyika and Lake Nyassa.

THE MEAN ELEVATION OF AFRICA.—In *Petermanns Mittheilungen*, 34 Band, VII, there is a paper on this subject by Mr. Franz Heiderich. Mr. Heiderich's method was to divide the continent from N. to S. into zones of ten degrees of latitude, and the whole surface into

trapezes measuring ten degrees each way ; to calculate the mean for each trapeze, then the mean for each zone, and lastly that for the whole continent.

The final result was 673 metres = 2208 feet. He compares this with previous calculations : that of Chavanne, 661.8 metres = 2171 feet ; that of De Lapparent, 602 metres, corrected by Heiderich to 612 = 2008 feet ; and that of John Murray, whose average (maximum 616 metres, minimum 531 metres) is calculated by Heiderich at 573 metres = 1880 feet.

The surface of Africa rises, according to Mr. Heiderich's figures for the zones, almost regularly from the North to the South. The elevations are :

N. Lat.	40°—30°	1919 feet.
"	30°—20°	1273 "
"	20°—10°	1611 "
"	10°— 0°	1106 "
S. Lat.	0°—10°	2720 "
"	10°—20°	3307 "
"	20°—30°	3327 "
"	30°—40°	3904 "

PORTUGUESE EXPLORATION IN CENTRAL AFRICA.—A letter from Mr. Luciano Cordeiro, Secretary of the Lisbon Geographical Society, announces the return to Lisbon of Maj. Carvalho, Capt. Almeida and S. Marques, leaders of the expedition sent in 1884 to the State of the Muata Yamvo, E. of Loanda. The party met with many difficulties, due to the disturbed state of the country and the rivalries among the small rulers, as well as to disease and the failure of supplies. The collections made were considerable, and the latitude and longitude

and the elevation of fifteen places were ascertained. The region explored covered two degrees of latitude and seven of longitude, and the elevations reported range between 2300 and 3800 feet.

Eclectic Physical Geography by Russell Hinman. Van Antwerp, Bragg & Co. Cincinnati, New York (copyright, 1888).

After a short introduction on some general laws of Nature, Mr. Hinman divides his work into six parts : on the Earth as a Planet, on the Atmosphere, on the Sea, on the Land, on Weather and Climate, and on Life.

Each of these subjects is treated in detail and yet with conciseness.

The definitions and explanations given are nearly all intelligible in themselves, and are made still clearer by the diagrams and the maps, which bear out the claim made for them that they illustrate the text. The representations of animal forms are not always successful.

As an accomplished geographer, Mr. Hinman is familiar with the recent theories, and he seems, in some instances, to accept as established what are still subjects of discussion ; and he is less clear than he might be in some of his definitions.

In the chapter on Man he says, for instance (p. 363) that the Indo-Germanic branch is divided into "Aryans, or ancestors of the Hindoos and Persians ; Græco-Romans, or ancestors of the Greeks, Albanians, Italians, ancient Gauls, Irishmen and Welsh ; the Slavonians, or ancestors of the Russians, Bulgarians and Baltic tribes ; and the ancient Germans, or ancestors of the modern

Germans, Dutch, Scandinavians, Anglo-Saxons, or Englishmen, and of a vast majority of the present inhabitants of the United States."

The word *Aryan* is sometimes, though not always, used in the restricted sense here attached to it, and may stand; but there is in the passage a confusion of ancient and modern names and ideas. Italians, Irishmen, Russians, Bulgarians and Hindoos are all modern, but they are classed with Persians and Baltic tribes. Where are the Baltic tribes and the ancient Gauls? The intention is, no doubt, to give a mere outline, but there is little symmetry in the outline that touches the Albanians and the Welsh and the Dutch, and passes by the French and Spaniards and Portuguese.

With so much that is excellent in the book, it would gain, rather than lose, by the suppression of the Scripture quotations, which give to the chapters the appearance, without the authority, of exhortations from the pulpit.

Le Grandi Strade del Commercio Internazionale proposte fino dal Sec. XVI. per Gustavo Coen, Livorno, 1888. (From the Author.)

Mr. Coen's work, which is dedicated to the Italian Geographical Society, keeps to its subject and gives in its 500 pages an interesting account of what is on record concerning the routes of communication between the Eastern and the Western worlds from the Middle Ages to the present time. Three principal routes were followed at the beginning of the Middle Ages: that by the Caspian and the Volga; that by the Red Sea and Cairo, or Alexandria, to the Mediterranean; and the

route by the Persian Gulf to Damascus, or Aleppo. All these lines were for a long time in the hands, chiefly, of the Arabs, with whom relations were established by the Venetians, Pisans, Genoese, and Catalans. It is a familiar story how the supremacy of the great Mediterranean cities was overthrown by the doubling of the Cape of Good Hope and the establishment of the Portuguese dominion in the East. Priuli, the Venetian diarist, quoted by Mr. Coen, writes in February, 1504: "The galleys from Alexandria have come in empty, a thing never seen before." There is a similar entry in March for the ships from Beyrout; and in August of the same year it is recorded that the King of Portugal had invited the Venetians to visit Lisbon in order to purchase their supplies, but, adds Priuli, "the sagacious Fathers propose to give mature consideration to this matter, which is of such great importance."

Sagacious the Fathers certainly were, for the documents exist which show that the Council of Ten, the same year, instructed Francesco Teldi, their special Envoy, to lay before the Soldan of Egypt a plan for cutting a canal from the "Red Sea straight through to this Sea" (the Mediterranean).

The passage in the instructions was afterwards cancelled, but the stroke of the pen drawn through the words was so slight that they are still distinctly legible.

The Turkish Sultans cherished the idea of the Canal and the Venetian ambassador Bernardo wrote from Constantinople in 1586 that, "Amurath (III) wishes to have the ancient channel that passes from sea to sea excavated, and that he (the Bey of Yemen) shall gather information from those acquainted with the country, and

shall take for the work three men from each village and relieve them of every other burden."

This was fifteen years after the battle of Lepanto had broken the Turkish naval power in the Mediterranean. The Portuguese (then subjects of Philip II.) were supreme in the Indian Ocean, and it is not surprising that the Turks gave up the idea of the canal.

The route by way of the Caspian and through Russia, if it never seriously competed with those to the south, always remained open, and seems now likely to become a great commercial road. This is, at least, Gen. Annenkoff's opinion, but Mr. Coen does not agree with him.

An especial interest attaches to the plans for cutting through the American isthmus.

The voyage of Columbus to the West in order to reach the East, the long-continued search for the secret of "The Strait," the repeated efforts to discover a North-west passage, all had their origin in the idea that it was illogical to accept the belief in a permanent barrier between the oceans.

Mr. Coen summarises the history of the various propositions for opening a water-way through the Isthmus and dismisses somewhat briefly the other routes to consider, at some length, the various phases through which the Panama Canal has passed. He states fairly some of the objections that have been made against the route by Panama, but he considers that the difficulties in the way are political rather than technical or economical. It will appear to some that he is disposed to accept too readily the statements made in the Company's *Bulletin*, and that he passes over real obstacles

with a light-heartedness worthy of M. de Lesseps. To use his own words, however, the decision in these matters must be left to time.

The Last Journals of Bishop Hannington, being Narratives of a Journey through Palestine in 1884 and a Journey through Masai-Land and U-Soga in 1885. Edited by E.C. Dawson, M. A. Oxon.

London, 1888.

Slight as are these Journals, which divide the little volume almost equally between them, they have the charm of naturalness in language and of the manly spirit which characterised Bishop Hannington.

In the Holy Land he sees what is before him, the dirt, the ruin, the desolation, the sordid and evil ways, through all the glamour of association; and he picks out a type. On the road from Damascus to the Druse country he met two Bedouin sheikhs, one very wicked-looking, the other mild and benevolent—a remarkably handsome man, who would have made a splendid model for an Abraham or a Jacob. When the talk turned on war, the mild man bared his body, which bore an amazing number of scars, and told with flashing eyes how the one and the other had been received, until, wrought up to fury, he took his sling and showed what he could do with a Philistine by striking a rock at a hundred yards distant with a force that shattered the stone sent.

This was, however, but mimic war. In Africa the Bishop was almost constantly in real danger, and he bore himself like a man.

Collisions between his men and the natives were frequent, and there was bitter quarrelling in his camp.

He was often compelled to make the unruly "eat stick," and to risk his life in an effort to stop a fight. Food was sometimes scarce and the Bishop turned sportsman to provide it. He took kindly to the work, more kindly, indeed, to judge from the entries in the diary, than was quite necessary.

It is not yet two years since he fell, miserably betrayed and murdered by the people he would have helped.

TITLES OF PAPERS IN GEOGRAPHICAL JOURNALS.

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Deutsche Kolonialzeitung.

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Emin Pasha—Commerce and Navigation on the Niger and the Benue—An Economical Crisis in Southern Brazil—Conditions of Labor in Usambara—Organization of the German Colonial Association—A Ride through the Coast Region of S. W. Africa—The East African Mission—History of the South African Republic (Karl Blind)—The Situation in the Pacific—Lord Aberdare on the Rights of the Royal Niger Company—Protection of German Interests Beyond Sea by the Navy—Administration of the East African Coast by the German East African Association—Cardinal Lavigerie and the Arab Question.

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First Explorations in the South of Angola—Colonization of Timor—Portuguese Guinea, and Its Present Condition.

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M. Maunoir's Report on the Progress of Geography in 1887—Celebration (20 April, 1888) of the Centenary of La Pérouse's Death (a thick pamphlet containing portraits, illustrations, and maps, besides a Bibliography, by M. Gabriel Marcel, of works relating to La Pérouse).

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